<u>WHAT IS CLAIMED IS:</u>

1   1.   Apparatus for reproducing information from a storage medium

2 comprising:

3   a motor unit operable to rotate said storage medium at any one of a plurality of

4 rotational speeds; and

5   a data control unit operatively coupled to said motor unit and operable with

6 said storage medium for accessing information contained on said storage medium;

7   said data control unit configured to receive size-indicating information relating

8 to an amount of data to be reproduced,

9   said data control unit configured to receive a request for a read operation and,

10 in response to said request, to control said motor unit to rotate said storage medium at one of

11 said rotational speeds depending on said size-indicating information.

1   2.   The apparatus of claim 1 wherein said data control unit is further

2 configured to control said motor unit to operate at a first rotational speed if said size-

3 indicating information indicates a data size that is less than a predetermined value and to

4 operate at a second rotational speed if said size-indicating information indicates a data size

5 that is greater than or equal to said predetermined value, said first rotational speed being less

6 than said second rotational speed.

1   3.   The apparatus of claim 2 wherein said second rotational speed is a

2 maximum rotational speed.

1   4.   The apparatus of claim 1 wherein said data control unit is further

2 configured to control said motor unit to operate at a first rotational speed if said size-

3 indicating information indicates a data size that is less than or equal to a first predetermined

4 value and to operate at a second rotational speed if said size-indicating information indicates

5 a data size that is greater than said first predetermined value and less than or equal to a

6 second predetermined value, said first rotational speed being less than said second rotational

7 speed, said second rotational speed being less than a maximum rotational speed.

1   5.   The apparatus of claim 1 wherein said data control unit is further

2 configured to detect a number of successive read operations wherein each read operation

3 occurs within a predetermined period of time of a preceding read operation, and to operate

4   said motor unit at a rotational speed based on the number of said successive read operations

5   detected.

6.   The apparatus of claim 5 wherein said data control unit is further

2   configured to operate said motor unit at a maximum rotational speed if a predetermined

3   number of successive read operations is detected.

7.   The apparatus of claim 1 wherein said data control unit is further

2   configured for data transfer operations wherein each data transfer operation includes an

3   amount of data equal to a maximum data size, and in response to a read request for an amount

4   of data greater than said maximum data size, said data control unit being operable to transfer

5   said amount of data in two or more data transfer operations, each data transfer operation of a

6   data size less than or equal to said maximum data size.

8.   The apparatus of claim 1 wherein said data control unit is further

2   configured to:

3   access said storage medium to receive said size-indicating information;

4   to transmit said size-indicating information to a principal unit; and

5   to receive said size-indicating information from said principal unit in

6   connection with said request for a read operation.

9.   The apparatus of claim 8 wherein said data control unit is further

2   configured for data transfer operations wherein each data transfer operation includes an

3   amount of data equal to a maximum data size, wherein said data control unit is further

4   configured to receive from said principal device a plurality of two or more requests for a read

5   operation when information to be reproduced from said storage medium is greater than said

6   maximum data size, each of said requests being for an amount of a data less than or equal to

7   said maximum data size.

10.   Apparatus for recording information onto a storage medium

2   comprising:

3   a motor unit operable to rotate said storage medium at any one of a plurality of

4   rotational speeds; and

5   a data control unit operatively coupled to said motor unit and operable with

6   said storage medium for recording information onto said storage medium,

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7   said data control unit configured to receive size-indicating information relating

8   to an amount of data to be recorded onto said storage medium,

9   said data control unit configured to receive a request for a write operation and

10   in response thereto to control said motor unit to rotate said storage medium at one of said

11   rotational speeds depending on said size-indicating information.

1   11.   Apparatus for reproducing information from a storage medium

2   comprising:

3   a motor unit operable to rotate a storage medium at any one of a plurality of

4   rotational speeds; and

5   a data control unit operatively coupled to said motor unit and operable with

6   said storage medium for reproducing information from said storage medium,

7   said data control unit configured to detect a number of successive read

8   operations wherein each read operation occurs within a predetermined period of time of a

9   preceding read operation, and to rotate said storage medium at a rotational speed based on the

10   number of said successive read operations.

1   12.   The apparatus of claim 11 wherein said data control unit is further

2   configured to control said motor unit at a maximum rotational speed if a predetermined

3   number of successive read operations is detected.

1   13.   The apparatus of claim 11 wherein said data control unit is further

2   configured to access size-indicating information stored on said storage medium relating to an

3   amount of data to be reproduced and to transmit said size-indicating information to a

4   principal unit, said data control unit being further configured to receive said size-indicating

5   information from said principal unit in connection with a request for a read operation and to

6   rotate said storage medium at a rotational speed based on said size-indicating information.

1   14.   The apparatus of claim 13 wherein said data control unit is further

2   configured to control said motor unit to operate at a first rotational speed if said size-

3   indicating information indicates a data size that is less than a predetermined value and to

4   operate at a second rotational speed greater than said first rotational speed if said size-

5   indicating information indicates a data size that is greater than or equal to said predetermined

6   value.

1   15.   The apparatus of claim 13 wherein said data control unit is further

2   configured to control said motor unit to operate at a first rotational speed if said size-

3   indicating information indicates a data size that is less than or equal to a first predetermined

4   value and to operate at a second rotational speed if said size-indicating information indicates

5   a data size that is greater than said first predetermined value and less than or equal to a

6   second predetermined value, said first rotational speed being less than said second rotational

7   speed, said second rotational speed being less than a maximum rotational speed.

1   16.   The apparatus of claim 11 wherein said data control unit is configured

2   for data transfer operations wherein each data transfer operation includes an amount of data

3   equal to a maximum data size, and in response to a read operation for an amount of data

4   greater than said maximum data size, said data control unit being operable to transfer said

5   amount of data in two or more data transfer operations, each data transfer operation of a data

6   size less than or equal to said maximum data size.

1   17.   Apparatus for recording information onto a storage medium

2   comprising:

3   a motor unit operable to rotate a storage medium at any one of a plurality of

4   rotational speeds; and

5   a data control unit operatively coupled to said motor unit and operable with

6   said storage medium for recording information onto said storage medium,

7   said data control unit configured to detect a number of successive write

8   operations wherein each write operation occurs within a predetermined period of time of a

9   preceding write operation, and to rotate said storage medium at a rotational speed based on

10 the number of said successive write operations.

1   18.   Apparatus for reproducing information from a storage medium

2   comprising:

3   rotation means for rotating said storage medium at one of a number of

4   predetermined rotation speeds;

5   read means for reading information from said storage medium; and

6   controller means operatively coupled to said read means and to said rotation

7   means for performing read operations of data from said storage medium,

8   said controller means operable to obtain information indicative of a data size,

9   said controller means operable for receiving a request of a read operation,

10   in response to said read operation, said rotation means rotating said storage

11   medium at one of said predetermined rotation speeds based on said information.

1   19.   Apparatus for recording information onto a storage medium

2   comprising:

3   rotation means for rotating said storage medium at one of a number of

4   predetermined rotation speeds;

5   write means for recording information from said storage medium; and

6   controller means operatively coupled to said write means and to said rotation

7   means for performing write operations of data onto said storage medium,

8   said controller means operable to obtain information indicative of a data size,

9   said controller means operable for receiving a request of a write operation,

10   in response to said write operation, said rotation means rotating said storage

11   medium at one of said predetermined rotation speeds based on said information.

1   20.   A method for reproducing information from a rotatable storage

2   medium comprising:

3   receiving a read operation request;

4   receiving size-indicating information relating to an amount of data to be

5   reproduced from said rotatable storage medium;

6   rotating said rotatable storage medium at one of a number of predetermined

7   rotation speeds based on said size-indicating information; and

8   reproducing said data from said rotatable storage medium.

1   21.   The method of claim 20 further including rotating said rotatable

2   storage medium at a first rotational speed if said size-indicating information indicates a data

3   size that is less than a predetermined value and rotating said rotatable storage medium at a

4   second rotational speed if said size-indicating information indicates a data size that is greater

5   than or equal to said predetermined value, said first rotational speed being less than said

6   second rotational speed.

1   22.   The method of claim 20 further including rotating said rotatable

2   storage medium at a first rotational speed if said size-indicating information indicates a data

3   size that is less than or equal to a first predetermined value and further including rotating said

4   rotatable storage medium at a second rotational speed if said size-indicating information

5   indicates a data size that is greater than said first predetermined value and less than or equal

6   to a second predetermined value, said first rotational speed being less than said second

7   rotational speed, said second rotational speed being less than a maximum rotational speed.

1   23.   The method of claim 20 further including detecting a number of

2   successive read operations, wherein each read operation occurs within a predetermined period

3   of time of a preceding one of said read operations, and rotating said rotatable storage medium

4   at a rotational speed based on the number of said successive read operations detected.

1   24.   The method of claim 23 further including rotating said rotatable

2   storage medium at a maximum rotational speed if a predetermined number of successive read

3   operations is detected.

1   25.   The method of claim 20 further including transferring reproduced data

2   to a principle unit wherein a data transfer operation is performed with a maximum data size,

3   the method further including, in response to receiving a read operation for an amount of data

4   greater than said maximum data size, transferring reproduced data in two or more data

5   transfer operations, each data transfer operation of a data size less than or equal to said

6   maximum data size.

1   26.   The method of claim 20 further including obtaining said size-

2   indicating information from said rotatable storage medium and transferring it to a principal

3   unit, receiving said read operation request from said principal unit, said read operation

4   request including said size-indicating information.

1   27.   The method of claim 26 further including transferring reproduced data

2   to a principle unit wherein a data transfer operation is performed with a maximum data size,

3   the method further including receiving a plurality of two or more read operation requests in

4   order to transfer an amount of reproduced data exceeding said maximum data size, each of

5   said read operations being of a data size less than or equal to said maximum data size.

1   28.   A method for recording information onto a storage medium

2   comprising:

3   receiving a write operation request, said write operation request including data

4   to be written;

5   receiving size-indicating information indicative of the amount of data to be

6   written; and

7   recording said data to be written including rotating said storage medium at one

8   of a number of predetermined rotation speeds based on said size-indicating information.